Please replace the paragraph starting at the top of page 17 as follows:

Referring now to Figures 5a through 5c, packaged micromirror assembly 21' according to a second preferred embodiment of the invention will now be described in detail. The components of packaged micromirror assembly 21' according to this embodiment of the invention are, for the most part, similar to those described above in packaged micromirror assembly 21. By way of example, the body of packaged micromirror assembly 21' is formed by a transfer molded approach, as described in the above-incorporated provisional application No. 60/234,074, and Patent Application 09/955,506; of course, other packaging techniques may also be used in connection with the present invention. According to this preferred embodiment of the invention, however, packaged micromirror assembly 21' includes capacitive sensor 80, for detecting the rotational position of mirror 29 by variations in capacitance.

In the Claims:

Please cancel Claims 4, 13, 19 and 26 with out prejudice.

Please amend Claims 1, 8, 12, 15-18, 20, 21 and 24 as follows:

1. (Amended) A packaged micromirror assembly, comprising:

a mirror element formed of a single piece of crystalline material, the mirror element having a frame, a mirror surface, and a plurality of hinges;

at least one permanent magnet attached to the mirror element;

a plurality of coil drivers, in proximity to the at least one permanent magnet, for orienting the mirror element;

a body encasing the plurality of coil drivers, and to which the mirror element is attached; and

a sensor having a conical shape and being disposed between the body and the mirror element, for detecting the orientation of the mirror, the sensor comprising a plurality of segmented capacitor plates forming a conical shape so that the segmented capacitor plates are angularly disposed at upper conical surfaces of the sensor, and

angularly arranged beneath and spaced apart from an underside of the mirror surface, the plurality of segmented capacitor plates being electrically insulated from one another.

8. (Amended) The system of claim 5, wherein the packaged micromirror assembly further comprises:

a control circuitry, coupled to the sensor and to the driver coils, for applying a signal to the driver coils responsive to the detected orientation of the mirror.

12. (Amended) A method of transmitting data signals, comprising:

generating a modulated light beam;

orienting a micromirror to reflect the modulated light beam from an upper surface of the micromirror to a receiver; and

measuring a capacitance between the micromirror at a plurality of locations beneath the micromirror to detect the orientation of the micromirror, wherein the capacitance measuring step comprises:

applying a high frequency signal between the micromirror and a plurality of segments arranged at a surface of a conical structure underlying the micromirror;

measuring the capacitance between each of the plurality of segments and the micromirror.

15. (Amended) A mirror assembly comprising:

a mirror element having a frame, a mirror surface, and a plurality of hinges;

at least one permanent magnet attached to the mirror element;

a plurality of coil drivers in proximity to at least one permanent magnet for orienting the mirror element;

a body holding a plurality of coil drivers, and to which the mirror element is attached; and

a sensor disposed between the body and the mirror element for detecting the orientation of the mirror, the sensor being of a conical shape and comprising a plurality of segmented capacitor plates angularly arranged beneath and spaced apart from an underside of the mirror surface, the plurality of segmented capacitor plates being angularly disposed at upper conical surfaces of the sensor, and electrically insulated from one another.

16. (Amended) The mirror assembly of claim 15 wherein the mirror element is formed of a single piece of crystalline material.

17. (Amended) The mirror assembly of claim 15 wherein the sensor has electrical leads extending from the body for presenting an indication of the orientation of the mirror element.

18 (Amended) The mirror assembly of claim 15 further comprising a memory for storing calibration values associated with the sensor.

20. (Amended) The mirror assembly of claim 15 wherein the body is configured to encase the plurality of coil drivers held by the body.

24. (Amended)A packaged micro-machined electro-mechanical assembly comprising:

an element having capacitive properties and a surface;

a body encasing the assembly; and

a sensor disposed between the body and the element for detecting the orientation of the element, the sensor being of a conical shape and comprising a plurality of segmented capacitor plates angularly arranged beneath and spaced apart from an underside of the element surface, the plurality of segmented capacitor plates

being angularly disposed at upper conical surfaces of the sensor, and electrically insulated from one another.

24. (Amended) The packaged micro-machined electro-mechanical assembly of claim 21 wherein the sensor has electrical leads extending from the body for presenting an indication of the orientation of the element.

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I CLAIM:

1. A packaged micromirror assembly, comprising:

a mirror element formed of a single piece of crystalline material, the mirror element having a frame, a mirror surface, and a plurality of hinges;

at least one permanent magnet attached to the mirror element;

a plurality of coil drivers, in proximity to the at least one permanent magnet, for orienting the mirror element;

a body encasing the plurality of coil drivers, and to which the mirror element is attached; and

a sensor, disposed between the body and the mirror element, for detecting the orientation of the mirror, the sensor comprising a plurality of segmented capacitor plates angularly arranged beneath and spaced apart from an underside of the mirror surface, the plurality of segmented capacitor plates being electrically insulated from one another.

2. The assembly of claim 1, wherein the sensor has electrical leads extending from the body for presenting an indication of the orientation of the mirror.

3. The assembly of claim 2, further comprising:

a memory for storing calibration values of the sensor.

4. The assembly of claim 1, wherein the sensor is of a conical shape, so that the segmented capacitor plates are angularly disposed at upper conical surfaces of the sensor.

5. An electronic system, comprising:

a data source, for generating data to be communicated to a receiver; and

a transmitter optical module, comprising:

a light source, coupled to the data source, for generating a modulated directed light beam; and

a packaged micromirror assembly for directing the directed light beam at the receiver, comprising:

a mirror element formed of a single piece of crystalline material, the mirror element having a frame, a mirror surface, and a plurality of hinges;

at least one permanent magnet attached to the mirror element;

a plurality of coil drivers, in proximity to the at least one permanent magnet, for orienting the mirror element;

a body encasing the plurality of coil drivers, and to which the mirror element is attached; and

a sensor, disposed between the body and the mirror element, for detecting the orientation of the mirror, the sensor comprising a plurality of segmented capacitor plates angularly arranged beneath and spaced apart from an underside of the mirror surface, the plurality of segmented capacitor plates being electrically insulated from one another.

6. The system of claim 5 wherein the data source comprises a computer.

7. The system of claim 5, wherein the light source comprises a laser.

8. The system of claim 5, wherein the packaged micromirror assembly further comprises:

control circuitry, coupled to the sensor and to the driver coils, for applying a signal to the driver coils responsive to the detected orientation of the mirror.

9. The system of claim 8, wherein the sensor has electrical leads extending from the body to the control circuitry, for presenting an indication of the orientation of the mirror.

10. The system of claim 5, further comprising:

a memory for storing calibration values of the sensor.

11. The system of claim 7, wherein the sensor is of a conical shape, so that the segmented capacitor plates are angularly disposed at upper conical surfaces of the sensor.

12. A method of transmitting data signals, comprising:

generating a modulated light beam;

orienting a micromirror to reflect the modulated light beam from an upper surface of the micromirror to a receiver; and

measuring a capacitance between the micromirror at a plurality of locations beneath the micromirror to detect the orientation of the micromirror.

13. The method of claim 12, wherein the capacitance measuring step comprises:

applying a high frequency signal between the micromirror and a plurality of segments arranged at a surface of a conical structure underlying the micromirror;

measuring the capacitance between each of the plurality of segments and the micromirror.

14. The method of claim 12, wherein the capacitance measuring step comprises:

arranging, into a bridge circuit, a plurality of segments arranged at a surface of a conical structure underlying the micromirror;

measuring the relative capacitance of the plurality of segments from the bridge circuit.

* * * * *